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ABSTRACT

This is an evaluation report for Title I compensatory education programs conducted in Seattle, Washington, in 1976-1977. Demographic and achievement data were collected for 5325 students participating in reading and mathematics programs. The Title I student body was characterized by a high proportion of blacks and many students from poor and single parent families. The program objective of improving students' percentile scores on the Metropolitan Achievement Tests (MAT) was achieved overall, although no substantial relationships were found between achievement gains (pre and post MAT) and teacher related variables, instructional model used, money spent per student, or number of students served. Based on the findings, a number of recommendations are made for change in program characteristics, administration, and evaluation procedures. (APM)

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TITLE I PROGRAM EVALUATION REPORT, 1976-77

REPORT NO. 77-18
SEPTEMBER 1977

EDWARD R. CIMLER
KATHY M. MELAND

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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ABSTRACT

Report 77-18 presents an evaluation for the 1976-77 school year of Seattle's compensatory education programs funded by Title I of the Elementary and Secondary Education Act of 1965. Data were collected and analyzed for 5325 Title I students; 2698 in reading programs, 1444 in math programs, and 1183 in both reading and math programs. As in the past, the Title I student body was characterized by a high proportion of Blacks and many students from poor and/or single parent families. The District Title I objective of improving students' percentile scores on the Metropolitan Achievement Test (MAT) was achieved overall. No substantial relationships were found between MAT gains from pre- to post-test and teacher related variables, instructional model used, money spent per student, or number of students served. Based on available information, the following recommendations were made:

1. Establish a time period for testing the inservice training program and establish behavioral criteria for success or failure of the training.

2. Condense the instructional models into two or three models with enough flexibility to accommodate individual schools.

3. Reexamine the models with respect to the maximum number of students served.

4. Examine the existing District policies for passing or retaining an individual student.

5. Adopt an experimental approach toward Title I which would encourage novel and innovative procedures resulting in measurable and realistic behavior change.

6. Restate any Title I objectives in terms consistent with the "catch-up" philosophy of compensatory education.

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INTRODUCTION

Title I programs have been operating in Seattle since 1965. During the 1976-77 school year, federal allocations amounting to 2.1 million dollars were provided for the District programs through the Elementary and Secondary Education Act of 1965. For that time period, Title I programs were operated at 43 public school program sites and 4 private agency sites (under the Neglected and Delinquent portion of the grant). One non-public program operated at 12 non-public schools.

The Seattle Title I programs are intended to remediate basic skills deficiencies in underachieving students, defined as students scoring in the lower three stanines on the Metropolitan Achievement Test (MAT) in either reading or math. In an attempt to accomplish this goal, students are usually removed from their regular classroom for 20 to 60 minutes a day and given special instruction in basic skills.

During the past year, the Title I programs in Seattle were conducted within an instructional model system. Each school staff chose one of twelve instructional models which became their program design for the year (descriptions of the models are included as Appendix A). The models specified factors such as subject, number of students served, student/teacher ratio, length of class period, staffing patterns, and instructional methods. Eleven of the twelve models were implemented in the District during 1976-77. Prior to the model system, each school wrote an individual Title I proposal every year and operated the program accordingly. At that time, the District was basically conducting 48 unique programs. The model system was introduced in an effort to eliminate unnecessary work for the building staff, and to determine and utilize the most effective teaching methods for the Title I classroom.

Information utilized in this report was collected during the 1976-77 school year from a variety of sources. Data gathered by two onsite visits at the beginning and end of the school year included information pertaining to 1) adherence to the instructional models, 2) adherence to the Federal and District guidelines, and 3) inservice training. Teacher related demographic and educational factors were collected during staff interviews. Budget information was obtained from the District Accounting Office, and MAT results were provided by the Tests and Measurements Office. Data were tabulated and stored on an IBM 370 computer and most data analyses were performed using the Statistical Package for the Social Sciences (SPSS). Because of the large number of cases processed and different sources of information, some data were missing for the individual variables. For this reason, total figures may not always be the sum of the sub-totals on the various tables. Data were also missing or extremely minimal for the four private agency programs and one of the schools in the non-public program. Those programs have been excluded from the analyses.

It is the intention of the authors of this report to present information in as concise a manner as possible in order to provide a useful reference to decision makers and interested parties. If more detail is desired as to methodology or statistics, please contact the Evaluation Office.

In order to assess the overall effectiveness of Title I programs in Seattle, this report addressed the following questions:

1. What were the demographic characteristics of the population served by Title I in Seattle?

2. Did the Title I program in the Seattle Public Schools achieve its objective as demonstrated by an increase in achievement scores from pre- to post-test on the Metropolitan Achievement Test (MAT)?

3. Did teacher demographic and educational factors affect student achievement in the Title I programs?

4. Was inservice training implemented in the Title I program and what effects have occurred?

5. Did teachers in Title I classrooms adhere to the instructional models?

6. Which instructional models were the most effective in Title I classrooms?

7. What was the Title I cost per student served and was this cost related to student achievement?

RESEARCH AND EVALUATION QUESTIONS

1. What were the demographic characteristics of the population served by Title I in Seattle?

Data

1. A total of 5325 students were enrolled in 54 Title I programs, serving students in kindergarten through eighth grade.

2. Reading instruction was given to 2698 Title I students, 1444 received math instruction, and 1183 received both reading and math instruction. (Title I enrollment figures for each school are shown in Appendix B.)

3. Fifty-two percent of the students attending Title I schools were eligible for the Federal Free Lunch Program.

4. The largest percentage of Title I students (20.4%) were in the fourth grade; the smallest percentage (.7%) were in the eighth grade.

5. There was a significantly higher proportion of Title I students (52%) than non-Title I students in the same schools (42%) not living at home with both parents [$\chi^2(1) = 6.51$, $p < .025$].

6. There was a significantly higher proportion of Black students (45%) in the Title I population than there was in the non-Title I population in the same schools (32%) [$\chi^2(4) = 12.64$, $p < .025$].

7. The sex distribution of the Title I students was comparable to that of the non-Title I students in the same schools.

8. Appendix C is a listing for each school of the ethnic, sex, and family living patterns for the Title I students.

Conclusions

1. Students receiving Title I instruction in Seattle were typically Black, from poor families, and/or not living with both parents. These characteristics have remained consistent with the characteristics of Title I students in past years, as evidenced by information from previous Title I reports.

2. The Title I students comprise a distinct group, with characteristics different from the student bodies in Title I schools.

2. Did the Title I program in the Seattle Public Schools achieve its objective as demonstrated by an increase in achievement scores from pre- to post-test on the Metropolitan Achievement Test (MAT)?

Data

1. The District Title I objective was to improve students' percentile scores on the MAT (Districtwide Comprehensive ESEA Title I Program for 1976-77, Office of Compensatory Programs, 9/29/76). Of 53 Title I reading programs, 15 did not increase their average percentile scores from pre- to post-test. Three of those schools were non-public.

2. Of 43 Title I math programs, all increased their average percentile scores.

3. Appendix D is a complete listing of percentile scores and gains for each school.

4. Because standard scores are comparable across grade levels, subsequent analyses used standard rather than percentile scores. Appendix E is a listing of standard scores for each school.

5. When compared to national norms in which a student achieves one year's growth per school year, the average grade equivalent increase for Seattle's Title I reading programs was .7 years. Appendix F is a listing of grade equivalent scores for each school.

6. The average grade equivalent increase for Title I math programs was almost 1.1 years.

Conclusions

1. The Seattle Title I programs did, for the most part, meet the stated objective of increasing percentile scores. However, the objective itself is unambitious for the following reasons:

   a. Title I students scored very low on the first MAT (pretest). If an individual happens to score extremely low on a pretest, he/she will almost certainly improve his/her score on the posttest. This statistical phenomenon is called regression towards the mean. A one or two point improvement from pre- to post-test may increase a percentile rating, but this improvement would be expected when considering very low pretest scores.

   b. A Title I student could meet program criteria each year and still fall farther behind his/her peer group academically. The objective does not make provisions for "catching up," which is central to the concept of compensatory education. For example, John in sixth grade may score 62 in reading on the MAT at the beginning of the year, which would place him in the third stanine and eleventh percentile. On the second testing, he may score 68 which would place him in the twelfth percentile, meeting the District objective. His scores indicate, however, that he

was reading at a grade equivalent of 3.5 on the first test and 4.2 on the second test. Even though the District objective was met, he gained only .7 years grade equivalent in one year. If this pattern continued, he would fall .3 years grade equivalent behind his class average every year. In that Title I students are already considerably behind their peers academically, their expected competence by the end of high school is well under the norms.

2. Although objectives have, for the most part, been achieved in Seattle's Title I programs, reading students are falling farther behind their peers.

3. Mathematics students are gaining on their peers at a very slow pace. On the average, math students are about 1.8 years grade equivalent behind their peers. At a gain of .1 grade equivalents per year it would take 18 years to "catch up" to their average peers.

3. Did teacher demographic and educational factors affect student achievement in the Title I programs?

Data

Teacher sex, ethnic category, years teaching experience, years experience in compensatory education, academic degree, and credit hours past last degree correlated with student gains on the MAT from pre- to post-test in the range of -.05 to .06.

Conclusion

There were no substantial relationships between available teacher demographic or educational variables and student achievement as measured by MAT gain during the school year.

4. Was inservice training implemented in the Title I program and what effects have occurred?

Data

1. The District contracted with Ernest Stakowski and Sue Wells of the Professional Development Center, Long Beach Unified School District, California to conduct five days of teacher training during the 1976-77 school year. The topic of the training was "Instructional Theory Into Practice" (ITIP) as developed by Madeline Hunter of UCLA.

2. Additionally, teachers met monthly during the school year for two hours with the Office of Compensatory Programs to discuss the ITIP training.

3. Only a few teachers missed any of the five training sessions.

4. A monitoring sheet containing 20 items with a 5 point rating scale (Appendix G) was utilized by the program evaluator at the beginning and end of the 1976-77 school year to assess the approximate degree to which ITIP was implemented in the classroom by the Title I teacher.

5. The average ITIP usage rating increased from 61.0 (of possible 100 indicating maximal usage) for the first monitoring to 70.3 for the second monitoring.

6. There were small negative correlations between final ITIP usage by the 69 teachers for whom ratings were obtained and student MAT gains (r = -.20 for reading; r = -.25 for math).

Conclusions

1. The sessions were well attended by teachers. From comments received, the training was enjoyable and seemed pertinent to classroom practices.

2. Teachers implemented the suggested techniques in the classroom during the school year.

3. There was no evidence to indicate a direct relationship between final ITIP usage and student achievement as measured by MAT gain.

4. The lack of positive relationship between student achievement and ITIP usage by the teachers should not be considered entirely negative for the following two reasons:

   a. This was the first year of a long term training project and any effects due to training may require more time to be observed.

   b. Because Title I instruction is a relatively small part of the entire educational program which influences MAT scores, it is difficult to assess the effects on the student attributable only to the Title I teacher.

5. Did teachers in Title I classrooms adhere to the instructional models?

Data

1. A description of the models is presented in Appendix A.

2. During the two monitorings of the Title I programs, eight items relating to the models were rated for adherence to model guidelines* on a scale from one (no evidence of adherence) to five (complete adherence). For the first monitoring the average program rating was 3.7, indicating some lack of adherence to model guidelines.

3. Programs using model D were the only ones with any substantial lack of adherence to guidelines with an average rating of 2.9 for the first monitoring.

4. At the second monitoring the average rating for all programs had increased to 4.0, indicating a substantial amount of adherence to model guidelines. Again, model D was low with 3.8.

Conclusions

1. Generally, the programs are adhering to model guidelines.

2. Most problem areas discovered on the first monitoring were corrected by the second monitoring.

3. From examination of Appendix A, there are few substantive differences among the models.

4. Although models D and H appear to employ different teaching strategies (e.g., all students involved in intensive individualized instruction), observations by Title I evaluators indicate that those features were not implemented in the Title I programs.

*Model guidelines are prepared and distributed by the Office of Compensatory Programs and are synopsized in Appendix A.

6. Which instructional models were most effective in the Title I classrooms?

Data

1. An analysis of variance of the MAT standard gains of the students in each model showed differences among the models ranging from 1.7 to 12.3 for reading, and from 7.1 to 15.3 for math. These results must be interpreted very cautiously however, due to unequal numbers of students, small numbers of some models, and similarity among the models.

2. Of the reading models represented in at least three schools, G and A showed the highest standard score gains (12.3 and 9.9 respectively) while non-public D, and Secondary B showed the lowest gains (4.5, 6.7, and 6.9 respectively).

3. For the math models represented in at least three schools, G and E achieved the highest standard score gains (15.3 and 13.4 respectively), and non-public had the lowest gain (8.8).

4. Correlations between pre- and post-ratings of adherence to model guidelines and student MAT gains were all insignificant, ranging from -.08 to .01.

Conclusions

1. Although model guidelines are generally followed in the Title I programs, it would be difficult to suggest any large differences in their effectiveness in improving students' MAT scores.

2. On paper and in practice there are few substantive differences in the operation of the instructional models. For this reason, it seems likely that differences in MAT gains among the models may be due to other factors.

7. What was the Title I cost per student served and was this cost related to student achievement?

Background Information

1. During the 1976-77 school year, Seattle spent 2.3 million dollars (annual Federal allocation plus some carryover from preceding year) in accordance with the instructional model system:

   a. Each school selected the most appropriate model(s) for its student body.

   b. Based on the number of students who scored in the lower three stanines on the MAT, each school received a specified number of staff to implement the model they chose.

   c. In addition to personnel, each school requisitioned sufficient supplies and materials to implement the model. The supplies and material cost varied considerably depending on the quantity of previously unused resources at each school.

2. Title I cost was defined in two ways:

   a. Program cost was the amount of money each school spent on all Title I students served in that school. This cost included money spent on personnel, supplies, and materials for all models in operation at each school.

   b. Model cost was the amount of money each model spent on all students in the District served by that model. This cost reflected personnel expenditures, supplies, and materials needed to operate all programs using the same model.

Program Cost Data

1. Appendix B contains a listing of the program cost per student for each school. The program cost data were obtained from the June 1977 Unit Status Report.

2. The average program cost per student was $440, with a range of $175 to $1129.

3. The correlation between program cost per student and student achievement in reading (defined as the average standard gain score on the MAT for each program) was -.08.

4. The correlation between program cost per student and student math achievement was -.32.

Model Cost Data

1. Appendix H is a listing for each model and subject showing the model cost per student and the average MAT gain score for students served by that model. The model cost data was based on information from the June 1977 Unit Status Report and the 1976-77 model allocations.

2. The average cost per student was $358 for reading models, with a range of $204 to $662.

3. The average cost per student was $378 for math models, with a range of $230 to $662.

4. Reading model cost per student correlated with reading achievement at -.51; correlation between math costs and math achievement was -.81.

Conclusions

1. There was no substantial relationship between the amount of money spent on the entire Title I student population of a school and how the students performed academically.

2. There was a significant negative relationship between money spent per model and academic achievement of the Title I students within each model, indicating the more money spent, the lower the MAT gains. This finding should be viewed cautiously, in that some programs with one teacher and few students (such as many of the non-public schools) are necessarily expensive to operate. Further, unequal and small numbers of the models may cause somewhat inaccurate estimates of correlations. The major implication appears to be that the more expensive models are not associated with higher gains.

SUMMARY

The Title I population characteristics have remained relatively consistent over the years. The students tend to come from economically depressed neighborhoods, many come from single parent families, and there is a higher proportion of Black students than in the general school population.

Approximately 38 hours of inservice training were made available to teachers. The training was well attended, and was being implemented in the classrooms. The training has thus far had little or no effect on the academic achievement of the students. However, the training was intended as a long term project and it may be premature to judge the educational effects. Similarly, the instructional models have been implemented but have shown little differences in academic achievement of the student. There is considerable variance among schools and models in cost per student, but no evident positive relationship between money spent and academic achievement.

Finally, the Title 1 objective of improvement of percentile scores has been achieved, but in itself does not make provisions for the "catch up" goal of compensatory education. If the achievement objective remains as stated, it will most likely continue to be met and the students will probably not catch up to their peer group.

DISCUSSION AND RECOMMENDATIONS

It is very difficult to assess the effects of a 2.1 million dollar supplementary educational program when many of these are overshadowed by the effects of the roughly 120 million dollar regular educational program being supplemented. Because most Seattle students scoring in the lower three stanines on the MAT are receiving some sort of additional educational assistance, it is difficult to determine what their level of achievement would be were no special programs, such as Title 1, available. Because the program has been observed for a number of years by teachers, administrators, and evaluators, there are some common observations which, although not substantiated in a statistical or experimental sense, seem worth reporting.

The "supplemental" and rather limited add-on nature of Title I programs appear to contribute to their lack of success in helping students to "catch up" with their peers. Sally, a Title I student, may be passed, for example, up to the fourth grade before it is recognized that she can read at only the first grade level. She is then removed from her regular work, (usually in other than reading or math) for 20 to 60 minutes per day and is taught reading at the level on which she is operating. The rest of the day she is in the regular fourth grade class, most of which requires reading at a level she cannot achieve. It seems that this procedure has two likely effects:

1. The child may become discouraged and unmotivated.

2. The child may not learn anything new for most of the day, effectively wasting her and her teacher's time.

Based on the large number of students eligible for Title I, it is apparent that many of these students have been promoted to the next grade without the academic skills necessary to perform at that grade level. There are understandable reasons for a student of questionable competence to be passed on to the next grade. Because the results of this practice seem undesirable in that the student may find herself in an academic environment in which she cannot succeed, it may prove more beneficial for all concerned to be realistic in the final appraisal of a students' capabilities. If the child cannot succeed at the next grade level, it is unfair to pass her. It may be reasonable that the criteria and procedures for passing or failing be reevaluated and that the decision to pass or fail be made contingent on academic performance. These practices are, of course, District responsibilities rather than Title I. If promoting a student is considered desirable for social reasons, it should be ensured that the range of teaching in the higher class extends to her level.

Based on the findings of this evaluation, the following recommendations are made:

1. The inservice training, although popular with the teachers, has so far shown little relationship to academic achievement. It may be helpful to establish a time period for testing the training program and to establish behavioral criteria for success or failure of the training.

2. The models have shown little differences in student achievement, most probably due to their commonalities. The models should be condensed into two or three models with enough flexibility to accommodate individual schools.

3. Because there is no positive relationship between money spent per student and academic achievement, the models should be reexamined with respect to the maximum number of students served with the Title I money available to the District.

4. It is suggested that the District examine existing policies for passing or retaining an individual student. Following the review, a written policy should be prepared and distributed specifying academic criteria for promotion and conditions under which a "social" promotion would be acceptable. These guidelines would facilitate difficult decisions for teachers and principals which have considerable impact on the educational program of the student.

5. It is suggested that an experimental approach be adopted toward Title I which would encourage novel and innovative procedures which would result in measurable and realistic behavior change. One possibility would be to teach Title I students at their level of competence in all topics in which they are deficit.

6. It is recommended that any Title I objectives which may be developed be stated in terms consistent with the "catch up" philosophy of compensatory education. If a student meets such objectives, he/she should eventually be capable of operating in the public school system without the help of a special program.

APPENDICES

APPENDIX A

DESCRIPTIONS OF TITLE I INSTRUCTIONAL MODELS*
(SEPTEMBER 1976)

Model	Subject	Grade Level	Setting	Maximum No. of Students Served	Minutes Per class Period	Staffing	Maximum Student/ Staff Ratio	Instructional Methods
A	Reading	Elementary	Title I Center	50	20	1 Certificated Teacher 1 ½-time Instructional Assistant	5:1	Diagnostic/ Prescriptive
C	Reading	Elementary	Title I Center	60	25-30	1 Certificated Teacher 1 Instructional Assist. or Service Aide	8:1	Adapted Basal Reader
D	Reading	Elementary	Five Self-contained Classrooms	Unspecified	60	1 Aide	Unspecified	Individualized Basic Skills
E	Math	Elementary	Math Center, Lab or Resource Room	50	45	1 Certificated Teacher ½ Instructional Assist. or Aide	8:1	Diagnostic/ Prescriptive
F	Math	Elementary	Regular Classroom	80	45	1 Certificated Teacher 2 Aides or 4 ½-time Aides	8:1	Diagnostic/ Prescriptive
G	Reading and Math	Elementary	Title I Center	50	20	1 Certificated Teacher ½-time Instructional Assistant or Aide	5:1 Primary 8:1 Intermediate	Diagnostic/ Prescriptive
H	Reading and Math	Elementary	Five Open Space Team Areas	30 Per Aide or 150	Unspecified	5 Service Aides	6:1	Individualized Basic Skills
SA	Reading and Math	Secondary	Title I Center	70-100	60	1 Certificated Teacher 1-2 Inst. Assist./Aides	7:1	Diagnostic/ Prescriptive
			Regular Classroom	40	25	1 Instructional Assistant	4:1	Diagnostic/ Prescriptive
SB	Reading and Math	Secondary	Resource Room	35-140	20-25	1 Certificated Teacher or a Needs Specialist 1-3 Assistants	4:1 2:1 for Some Reading	Diagnostic/ Prescriptive
Distar	Reading Arithmetic Language	Elementary	Self-Contained Classroom	30	30 Per Subject	1 Certificated Teacher 2 Distar Assistants 1 Part-time Distar Trainer 1 Part-time Distar Tester	10:1	Distar Approach
Non-Public	Reading and Math	Elementary and Secondary	Title I Classroom or Resource Center	Unspecified	20-30	8 Certificated Teachers 2 Instructional Assists.	5:1	Diagnostic/ Remediation

*For a more detailed description, refer to a copy of the models available from the Office of Compensatory Education Programs, Rm. 108, Marshall Center.

APPENDIX B

NUMBER OF STUDENTS ENROLLED IN SCHOOL TITLE I MATH AND READING PROGRAMS, TITLE I EXPENDITURES, AND COSTS PER STUDENT
(SEPTEMBER 1976)

School	Total School Enrollment	Total Title I Enrollment	Number of Title I Reading Students	Number of Title I Math Students	Number of Title I Reading and Math Students	Total 1976-77 Title I Expenditures	Cost Per Student
Adams	372	148	69	79	-	43,955	297
Allen	347	90	22	16	52	51,784	575
Beacon Hill	357	126	69	32	25	42,626	338
Brighton	344	109	109	-	-	41,412	380
Colman	353	152	55	71	26	50,390	331
Columbia	302	114	114	-	-	50,675	445
Concord	187	69	69	-	-	33,165	481
Cooper	334	152	48	40	64	40,370	266
Day	396	162	70	48	44	55,038	340
Dearborn Park	511	178	69	52	57	40,743	229
Dunlap	368	132	37	37	58	43,713	331
Fairmount Park	353	70	28	36	6	26,455	378
Graham Hill	263	35	35	-	-	25,920	741
Gatzert	387	140	82	49	9	62,201	444
Green Lake	223	50	41	9	-	21,460	429
Hawthorne	249	115	51	41	23	20,182	175
High Point	174	148	60	19	69	35,333	239
Hughes	437	96	96	-	-	40,927	426
Kimball	434	143	120	15	8	62,009	434
King	334	54	54	-	-	22,306	413
Leschi	414	154	42	24	88	64,372	418
Lowell	276	77	77	-	-	30,839	395
McGilvra	181	58	58	-	-	20,810	359
Madrona	867	184	72	73	39	73,994	402
Maple	419	149	51	43	55	46,984	315
Minor	502	187	50	49	88	72,744	389
Muir	541	149	72	77	-	36,180	242
Oak Lake	343	80	43	35	2	36,137	452
Roxhill	352	108	48	35	25	40,921	379
Sanislo	234	57	37	8	12	24,333	427
Stevens	426	47	19	12	16	23,653	503
Van Asselt	588	228	77	13	138	94,847	416
West Woodland	560	102	43	18	41	61,890	607
Whitworth	546	182	43	65	74	59,449	327
Wing Luke	304	97	4	93	-	31,183	321
Blessed Sacrament	140	19	0	13	6	15,805	832
Guadalupe	224	29	12	9	8	15,805	545
Mt. Virgin	92	24	11	12	1	15,805	659
St. Alphonsus	205	28	20	5	3	15,805	564
St. Benedict	247	17	6	4	7	15,805	930
St. Catherine	247	14	1	6	7	15,805	1129
St. Edward	384	36	14	15	7	15,805	439
St. George	271	36	23	10	3	15,805	439
St. Joseph	523	38	9	22	7	15,805	416
St. Mary	195	45	22	12	11	15,805	351
St. Teresa	188	47	23	14	10	15,805	336
Boren	597	76	76	-	-	27,848	366
Hamilton	639	108	63	19	26	51,591	478
Meany	779	43	43	-	-	24,485	569
Mercer	1243	96	47	25	24	43,846	457
Monroe	844	74	50	6	18	32,805	443
Sharples	832	89	53	15	21	42,053	473
South Shore	888	293	153	140	-	95,584	326
Wilson	509	71	38	28	5	40,869	576
Total	22,325	5325	2698	1444	1183	2,061,936	387

APPENDIX C

NUMBER OF STUDENTS BY ETHNIC, SEX, AND FAMILY PATTERNS FOR EACH SCHOOL
(SEPTEMBER 1976)

School		Ethnic						Sex		Family Patterns		Total
		Black	White	Asian	His-panic	American Indian	Other	M	F	Both Parents	Other	
Adams	TI*	-	75	6	5	19	1	59	47	60	45	106
	Dist**	4	294	16	10	40	-	185	179	176	140	364
Alle-	TI	3	49	3	3	5	-	34	29	41	22	63
	Dist	7	277	18	13	17	-	171	161	197	81	332
Beacon Hill	TI	40	14	55	6	11	-	78	48	79	47	126
	Dist	75	48	200	25	20	-	193	175	233	92	368
Brighton	TI	63	14	20	11	1	-	56	53	55	54	109
	Dist	172	42	112	2-	6	-	175	185	200	136	360
Colman	TI	108	8	1	1	1	1	76	44	30	89	120
	Dist	328	16	15	9	7	-	188	177	92	160	365
Columbia	TI	62	21	14	8	8	1	74	40	46	67	114
	Dist	149	77	53	10	11	-	143	157	112	160	300
Concord	TI	4	51	-	13	1	-	41	28	48	21	69
	Dist	5	153	4	31	4	-	104	93	116	55	197
Cooper	TI	9	69	6	10	13	2	65	44	61	47	109
	Dist	27	241	28	20	29	-	164	181	186	115	345
Day	TI	16	90	11	3	7	-	73	54	65	62	127
	Dist	35	296	32	12	18	-	178	215	193	155	393
Dearborn Park	TI	76	35	20	23	7	1	88	74	65	96	162
	Dist	195	87	147	57	10	-	217	279	274	185	496
Dunlap	TI	69	16	7	9	1	-	52	50	45	57	102
	Dist	200	85	64	20	5	-	183	191	136	143	374
Fairmount Park	TI	16	42	3	5	4	-	47	23	36	34	70
	Dist	34	266	14	19	15	-	182	166	204	102	348
Graham Hill	TI	14	8	6	6	1	-	24	11	18	17	35
	Dist	80	98	66	20	5	-	138	131	185	84	269
Gatzert	TI	56	6	34	10	17	-	70	53	50	73	123
	Dist	156	41	132	22	23	-	196	178	140	180	374
Green Lake	TI	8	38	1	2	1	-	29	21	29	21	50
	Dist	13	196	9	5	1	-	122	102	219	113	224
Hawthorne	TI	60	10	5	5	4	-	52	32	35	49	84
	Dist	130	71	34	12	8	-	131	124	117	96	255
High Point	TI	35	17	15	21	19	3	47	63	32	77	110
	Dist	67	64	23	24	35	-	89	124	43	178	213
Hughes	TI	8	68	1	10	8	-	51	44	68	27	95
	Dist	18	344	18	25	25	-	189	241	306	111	430
Kimball	TI	45	13	44	10	9	1	61	61	80	42	122
	Dist	95	97	208	25	11	-	217	219	325	116	436

*TI represents figures for Title I students.
**Dist represents figures for all Seattle Public School District students.

APPENDIX C (cont.)

NUMBER OF STUDENTS BY ETHNIC, SEX, AND FAMILY PATTERNS FOR EACH SCHOOL
(SEPTEMBER 1976)

School		Ethnic						Sex		Family Patterns		Total
		Black	White	Asian	Hispanic	American Indian	Other	M	F	Both Parents	Other	
King	TI*	36	6	-	11	1	-	21	33	18	36	54
	Dist**	181	121	9	27	2	-	156	184	189	143	340
Leschi	TI	120	-	1	-	1	2	71	59	37	91	130
	Dist	417	18	5	4	1	-	216	229	182	290	445
Lowell	TI	17	31	20	4	4	1	51	26	34	42	77
	Dist	72	155	41	8	6	-	154	128	133	147	282
McGilvra	TI	26	27	-	-	4	1	31	27	34	23	58
	Dist	53	130	2	4	-	-	96	93	118	41	189
Madrona	TI	119	27	3	5	4	-	96	62	60	98	158
	Dist	329	466	26	10	15	-	449	397	517	254	846
Maple	TI	38	60	24	12	11	3	87	61	88	57	148
	Dist	78	212	94	26	20	-	223	207	239	132	430
Minor	TI	141	11	3	7	-	-	88	74	41	121	162
	Dist	395	45	22	30	8	-	249	251	115	260	500
Muir	TI	93	6	2	2	2	2	55	52	37	68	107
	Dist	336	147	35	9	10	-	261	276	318	249	537
Oak Lake	TI	4	65	5	3	3	-	45	35	51	29	80
	Dist	11	277	16	9	9	-	165	157	176	98	322
Roxhill	TI	17	73	5	7	6	-	56	52	60	48	108
	Dist	29	264	19	17	15	-	159	185	185	109	344
Sanislo	TI	7	33	3	9	5	-	35	22	45	12	57
	Dist	19	159	31	18	7	-	121	113	163	48	234
Stevens	TI	33	9	-	4	1	-	27	20	24	23	47
	Dist	112	183	13	20	3	-	162	169	244	85	331
Van Asselt	TI	93	24	27	22	11	1	94	84	60	118	178
	Dist	299	91	101	56	23	-	287	283	180	262	570
West Woodland	TI	4	70	3	1	3	-	50	31	44	37	81
	Dist	17	496	21	10	17	-	307	254	246	186	561
Whitworth	TI	81	41	11	4	2	1	83	57	67	72	140
	Dist	259	166	81	8	11	-	286	239	321	235	525
Wing Luke	TI	55	9	8	19	6	-	49	48	37	60	97
	Dist	155	46	41	34	14	-	153	137	163	137	290
Blessed Sacrament	TI	2	13	3	-	-	1	10	9	8	3	19
	Dist	-	-	-	-	-	-	-	-	-	-	-
Guadalupe	TI	1	22	-	-	4	2	19	10	12	5	29
	Dist	-	-	-	-	-	-	-	-	-	-	-
Mt. Virgin	TI	14	1	-	-	-	9	9	15	3	9	24
	Dist	-	-	-	-	-	-	-	-	-	-	-

*TI represents figures for Title I students.
**Dist represents figures for all Seattle Public School District students.

APPENDIX C (cont.)

NUMBER OF STUDENTS BY ETHNIC, SEX, AND FAMILY PATTERNS FOR EACH SCHOOL
(SEPTEMBER 1976)

School		Ethnic						Sex		Family Patterns		Total
		Black	White	Asian	His-panic	American Indian	Other	M	F	Both Parents	Other	
St. Alphonsus	TI	1	27	-	-	-	-	21	7	12	6	28
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. Benedict	TI	-	13	3	1	-	-	5	8	5	3	17
	Dist	-	-	-	-		-	-	-	-	-	-
St. Catherine	TI	-	10	-	-	-	4	5	9	4	5	14
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. Edward	TI	18	12	3	-	-	3	18	18	15	8	36
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. George	TI	8	9	12	-	2	5	17	19	6	5	36
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. Joseph	TI	8	15	-	-	-	15	22	16	16	6	38
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. Mary	TI	20	-	2	-	2	21	24	21	12	8	45
	Dist	-	-	-	-	-	-	-	-	-	-	-
St. Teresa	TI	38	3	-	-	-	6	21	26	13	11	47
	Dist	-	-	-	-	-	-	-	-	-	-	-
Boren	TI	14	42	3	12	5	-	38	38	44	32	76
	Dist	70	372	40	55	28	-	269	296	424	264	565
Hamilton	TI	69	26	6	5	2	-	62	46	49	59	108
	Dist	202	332	56	19	18	-	314	313	350	298	627
Meany	TI	34	7	-	-	2	-	26	17	13	30	43
	Dist	217	473	40	19	18	-	381	386	525	364	767
Mercer	TI	57	10	12	10	6	1	50	46	40	55	96
	Dist	387	253	490	49	24	-	607	596	858	458	1203
Monroe	TI	-	59	2	1	12	-	40	34	45	29	74
	Dist	5	700	23	20	57	-	373	432	466	244	805
Sharples	TI	51	13	11	10	4	-	53	36	45	44	89
	Dist	292	201	224	57	22	-	405	391	502	348	796
South Shore	TI	139	50	19	12	6	-	134	92	125	101	226
	Dist	378	270	167	42	18	-	433	442	615	383	875
Wilson	TI	37	18	2	3	5	-	46	19	26	39	65
	Dist	128	284	30	28	15	-	264	221	332	283	435
Total	TI	2093	1486	445	325	2.1	88	2640	2048	2173	2515	4688
	Dist	6221	8654	2820	966	951	-	9655	9657	11015	7820	19312
Percent of Total	TI	44.7	31.7	9.5	6.9	5.3	1.9	56.3	43.7	46.4	53.6	100.0
	Dist	32.2	44.8	14.6	5.0	3.4	-	50.0	50.0	58.5	41.5	100.0

*TI represents figures for Title I students.
**Dist represents figures for all Seattle Public School District students.

APPENDIX D

READING AND MATH PERCENTILE SCORES AND GAINS FOR EACH SCHOOL
(SEPTEMBER 1976)

School	Reading				Mathematics			
	N	Pretest Mean Percentile Score	Posttest Mean Percentile Score	Mean Percentile Gain	N	Pretest Mean Percentile Score	Posttest Mean Percentile Score	Mean Percentile Gain
Adams	40	12.3	21.3	9.0	55	10.1	35.3	25.2
Allen	26	10.5	30.6	20.1	26	12.2	13.5	1.4
Beacon Hill	70	13.7	21.5	7.8	50	11.2	30.1	18.9
Brighton	77	15.7	22.0	6.3	-	-	-	-
Colman	32	9.1	11.1	2.1	48	10.6	14.2	3.6
Columbia	73	14.6	25.8	11.2	-	-	-	-
Concord	41	13.3	19.3	6.0	-	-	-	-
Cooper	44	13.4	21.5	8.1	50	11.7	19.8	8.1
Day	53	14.5	36.4	21.9	49	14.7	28.2	13.6
Dearborn Park	37	10.3	11.7	1.4	51	11.1	16.5	5.3
Dunlap	42	8.9	23.5	14.6	45	11.5	22.5	11.0
Fairmount Park	23	12.2	29.7	17.5	28	8.7	17.0	8.3
Graham Hill	26	13.3	20.1	6.8	-	-	-	-
Gatzert	48	19.2	20.2	1.0	48	13.0	16.4	3.4
Green Lake	21	13.0	33.8	20.7	3	6.0	35.3	29.3
Hawthorne	40	17.8	25.3	7.6	38	10.4	23.8	13.3
High Point	38	8.5	18.4	9.8	39	8.5	19.1	10.5
Hughes	63	21.8	32.0	10.3	-	-	-	-
Kimball	99	18.6	35.4	16.8	21	21.7	29.4	7.7
King	30	25.1	44.5	19.5	-	-	-	-
Leschi	27	12.6	26.6	13.9	26	10.8	22.0	11.2
Lowell	54	26.3	41.7	15.4	-	-	-	-
McGilvra	24	30.8	54.5	23.8	-	-	-	-
Madrona	71	9.3	12.3	2.9	77	8.0	14.3	6.3
Maple (not tested)	-	-	-	-	-	-	-	-
Minor	35	8.8	18.8	10.0	52	12.0	19.8	7.9
Muir	47	10.1	16.8	6.7	51	13.9	22.0	8.1
Oak Lake	24	12.8	37.9	25.1	35	10.5	39.1	28.6
Roxhill	45	15.6	28.0	12.4	53	12.8	24.3	11.5
Sanislo	26	13.2	37.9	24.8	12	7.5	21.3	13.8
Stevens	24	18.5	28.1	9.7	22	10.6	18.0	7.4
Van Asselt	99	11.9	17.7	5.9	54	9.5	25.7	16.2
West Woodland	40	17.1	30.9	13.8	22	11.1	33.7	22.6
Whitworth	63	16.8	32.4	15.6	80	10.7	30.3	19.6
Wing Luke	1	68.0	38.0	-30.0	33	16.0	23.5	7.5
Blessed Sacrament	4	23.0	50.0	27.0	15	31.2	63.8	32.6
Guadalupe	13	28.5	30.9	2.4	10	27.8	36.5	8.7
Mt. Virgin	-	-	-	-	10	5.6	14.8	9.2
St. Alphonsus	19	31.6	32.3	0.7	5	28.0	37.2	9.2
St. Benedict	9	30.1	31.2	1.1	6	31.3	37.0	5.7
St. Catherine	7	28.4	27.3	-1.1	13	17.4	18.2	0.8
St. Edward	15	26.5	28.7	2.2	20	15.5	30.0	14.6
St. George	19	6.1	19.1	13.0	11	11.4	27.5	16.2
St. Joseph	10	12.2	16.3	4.1	13	15.1	26.7	11.6
St. Mary	22	8.3	8.2	-0.1	18	13.1	14.7	1.6
St. Teresa	23	19.5	16.8	-2.7	18	11.3	14.8	3.6
Boren	51	17.3	20.4	3.1	-	-	-	-
Hamilton	79	15.6	14.6	-0.9	36	12.2	20.7	8.5
Meany	25	7.9	10.3	2.4	-	-	-	-
Mercer	45	14.4	16.7	2.3	36	8.6	18.6	10.0
Monroe	55	25.4	30.2	4.8	17	14.4	25.9	14.5
Sharples	61	13.9	18.0	4.0	29	11.2	31.5	20.3
South Shore	105	14.7	19.8	5.2	106	11.6	26.0	14.5
Wilson	26	11.7	16.9	5.2	27	9.6	15.4	5.8
Total	2091	15.5	24.3	8.8	1458	11.9	23.8	11.8

APPENDIX E

READING AND MATH STANDARD SCORES AND GAINS FOR EACH SCHOOL
(SEPTEMBER 1976)

School	Reading				Mathematics			
	N	Pretest Mean Standard Score	Posttest Mean Standard Score	Mean Standard Gain	N	Pretest Mean Standard Score	Posttest Mean Standard Score	Mean Standard Gain
Adams	40	43.3	51.6	8.3	55	49.5	68.1	18.7
Allen	26	38.0	55.0	17.0	26	46.5	53.0	6.5
Beacon Hill	70	47.3	57.1	9.9	50	57.7	73.2	15.5
Brighton	77	48.3	56.0	7.7	-	-	-	-
Colman	32	41.1	48.5	7.3	48	50.2	60.8	10.6
Columbia	72	45.2	56.2	11.1	-	-	-	-
Concord	41	48.3	56.6	8.3	-	-	-	-
Cooper	44	42.5	52.6	10.1	50	55.5	67.0	11.5
Day	53	45.1	60.5	15.5	49	50.5	64.6	14.1
Dearborn Park	37	41.9	47.5	5.6	51	48.7	59.7	11.0
Dunlap	42	37.3	50.2	12.9	45	44.2	58.4	14.2
Fairmount Park	23	45.7	59.4	13.7	28	51.8	64.5	12.7
Graham Hill	25	49.0	57.2	8.2	-	-	-	-
Gatzert	48	46.5	53.2	6.7	48	61.0	69.1	8.1
Green Lake	21	37.6	52.5	14.9	3	51.0	71.7	20.7
Hawthorne	40	49.8	56.4	6.7	38	50.5	65.2	14.7
High Point	38	40.6	55.2	14.6	39	48.5	61.7	13.2
Hughes	63	54.1	63.3	9.2	-	-	-	-
Kimball	99	50.1	63.1	13.0	21	48.1	60.3	12.2
King	30	36.6	51.1	14.5	-	-	-	-
Leschi	27	42.3	51.8	9.6	26	39.3	51.5	12.2
Lowell	52	43.7	54.8	11.2	-	-	-	-
McGilvra	24	44.7	59.7	15.0	-	-	-	-
Madrona	70	52.0	61.7	9.6	77	62.1	70.5	8.4
Maple (not tested)	-	-	-	-	-	-	-	-
Minor	35	35.9	46.9	10.9	52	46.2	59.0	12.8
Muir	46	36.8	47.5	10.7	51	44.6	58.3	13.7
Oak Lake	23	33.7	51.7	17.9	35	57.1	76.8	19.7
Roxhill	45	48.1	58.1	10.1	53	60.0	72.0	12.0
Sanislo	26	41.7	60.5	18.8	12	51.1	66.8	15.8
Stevens	24	40.3	53.0	12.7	22	42.7	57.8	15.1
Van Asselt	99	47.4	57.3	9.9	54	53.6	69.9	16.4
West Woodland	40	46.9	58.0	11.1	22	45.2	62.4	17.2
Whitworth	63	47.7	61.1	13.3	79	47.0	67.0	20.1
Wing Luke	1	77.0	63.0	-8.0	33	44.5	59.0	14.5
Blessed Sacrament	4	59.8	69.8	10.0	15	83.7	98.3	14.7
Guadalupe	13	62.2	67.6	5.4	10	69.7	78.1	8.4
Mt. Virgin	-	-	-	-	10	57.9	67.6	9.7
St. Alphonsus	19	64.7	68.1	3.4	5	67.6	75.6	8.0
St. Benedict	9	60.1	69.1	9.0	6	72.0	81.0	9.0
St. Catherine	7	72.4	76.4	4.0	13	75.9	80.5	4.5
St. Edward	15	58.9	62.7	3.8	20	65.6	76.8	11.3
St. George	19	37.9	53.3	15.4	11	66.7	79.1	12.4
St. Joseph	10	49.8	55.0	5.2	13	69.3	78.9	9.6
St. Mary	22	45.9	41.1	-4.8	18	60.9	63.0	2.1
St. Teresa	23	54.4	56.9	2.5	18	62.3	70.8	8.4
Boren	51	69.5	73.3	3.8	-	-	-	-
Hamilton	79	66.7	68.2	1.5	36	76.4	83.2	6.8
Meany	25	63.0	64.4	1.4	-	-	-	-
Mercer	45	68.0	69.7	1.7	35	73.3	82.0	8.7
Monroe	55	75.7	78.2	2.6	17	79.1	86.8	7.7
Sharples	61	68.0	71.7	3.8	28	76.5	89.3	12.8
South Shore	105	61.6	68.5	6.9	104	68.9	80.7	11.8
Wilson	26	64.8	71.4	6.6	27	74.6	80.8	6.2
Total	2084	50.5	59.5	9.0	1453	56.4	69.0	12.6

APPENDIX F

READING AND MATH GRADE EQUIVALENT SCORES
AND GAINS FOR EACH SCHOOL
(SEPTEMBER 1976)

School	Reading				Mathematics			
	N	Pretest Mean Grade Equivalent Score	Posttest Mean Grade Equivalent Score	Mean Grade Equivalent Gain	N	Pretest Mean Grade Equivalent Score	Posttest Mean Grade Equivalent Score	Mean Grade Equivalent Gain
Adams	40	2.1	2.7	.6	55	2.5	4.1	1.6
Allen	26	1.8	3.0	1.1	9	2.4	3.0	.6
Beacon Hill	70	2.5	3.2	.7	50	3.2	4.7	1.5
Brighton	77	2.5	3.1	.6	-	-	-	-
Colman	32	2.0	2.4	.4	48	2.7	3.4	.8
Columbia	72	2.3	3.1	.8	-	-	-	-
Concord	41	2.6	3.2	.6	-	-	-	-
Cooper	44	2.1	2.8	.7	50	3.1	4.0	1.0
Day	53	2.2	3.5	1.3	49	2.6	3.7	1.1
Dearborn Park	37	2.0	2.4	.4	-	-	-	-
Dunlap	42	1.7	2.5	.8	45	2.2	3.2	1.0
Fairmount Park	23	2.3	3.4	1.1	28	2.8	3.8	1.0
Graham Hill	25	2.5	3.3	.7	-	-	-	-
Gatzert	48	2.3	2.8	.5	48	3.5	4.2	.7
Green Lake	21	1.8	2.7	1.0	3	2.6	4.5	1.9
Hawthorne	40	2.6	3.2	.6	38	2.7	3.8	1.2
High Point	38	2.0	3.0	1.0	26	2.4	3.4	1.0
Hughes	63	3.0	3.8	.8	-	-	-	-
Kimball	99	2.7	3.8	1.1	21	2.4	3.3	.9
King	30	1.7	2.6	.9	-	-	-	-
Leschi	27	2.0	2.7	.7	26	1.8	2.6	.8
Lowell	52	2.1	3.0	.9	-	-	-	-
McGilvra	24	2.2	3.3	1.1	-	-	-	-
Madrona	70	2.8	3.6	.8	10	2.6	3.1	.5
Maple (not tested)	-	-	-	-	-	-	-	-
Minor	35	1.7	2.3	.6	52	2.3	3.3	1.0
Muir	46	1.7	2.3	.6	51	2.2	3.2	1.0
Oak Lake	23	1.6	2.7	1.1	-	-	-	-
Roxhill	45	2.5	3.4	.9	-	-	-	-
Sanislo	26	2.1	3.5	1.4	12	2.7	4.0	1.3
Stevens	24	1.9	2.8	.9	22	2.0	3.1	1.2
Van Asselt	99	2.4	3.2	.8	54	3.0	4.4	1.4
West Woodland	40	2.4	3.2	.8	12	2.3	3.6	1.2
Whitworth	63	2.4	3.5	1.1	79	2.4	4.0	1.6
Wing Luke	1	4.5	3.6	-.9	33	2.2	3.1	.9
Blessed Sacrament	4	3.5	4.5	1.1	21	5.4	7.0	1.6
Guadalupe	13	3.9	4.5	.6	23	4.7	5.4	.7
Mt. Virgin	-	-	-	-	10	3.2	4.1	.9
St. Alphonsus	19	4.1	4.4	.4	5	4.0	4.9	.8
St. Benedict	9	3.7	4.5	.8	-	-	-	-
St. Catherine	7	4.9	5.3	.4	-	-	-	-
St. Edward	15	3.3	3.7	.4	20	3.9	5.0	1.1
St. George	19	1.8	2.8	1.0	11	4.1	5.3	1.2
St. Joseph	10	2.6	3.1	.4	-	-	-	-
St. Mary	22	2.4	2.2	-.2	18	3.6	3.7	.2
St. Teresa	23	3.1	3.2	.2	18	3.6	4.4	.7
Boren	51	4.5	4.9	.4	-	-	-	-
Hamilton	79	4.1	4.3	.2	36	5.9	5.7	.8
Meany	25	3.7	3.9	.2	-	-	-	-
Mercer	43	4.2	4.5	.3	35	4.6	5.5	.9
Monroe	55	5.2	5.7	.5	17	5.2	6.1	.9
Sharples	61	4.2	4.7	.5	28	4.9	6.4	1.5
South Shore	105	3.6	4.4	.8	104	4.2	5.4	1.2
Wilson	26	3.9	4.7	.8	27	4.7	5.4	.6
Total	2084	2.7	3.5	.7	1194	3.2	4.2	1.1

APPENDIX G

INSTRUCTIONAL VARIABLES
(SEPTEMBER 1976)

	Not at all	Very Little	Somewhat	A Lot	Extensively
Objectives: Taught to an objective by:					
1. Defining the objective	1	2	3	4	5
2. Giving explanations	1	2	3	4	5
3. Asking questions	1	2	3	4	5
4. Requiring related activity	1	2	3	4	5
5. Monitoring responses	1	2	3	4	5
6. Adjusting presentation	1	2	3	4	5
7. Fulfilling the stated objectives	1	2	3	4	5
Techniques: Encouraged motivation, retention, and transfer through consideration of:					
8. Level of concern	1	2	3	4	5
9. Feeling tones	1	2	3	4	5
10. Interest of audience	1	2	3	4	5
11. Success of individuals	1	2	3	4	5
12. Knowledge of results	1	2	3	4	5
13. Relationship of activity to reward	1	2	3	4	5
14. Meaningfulness of material	1	2	3	4	5
15. Positive and negative transfer	1	2	3	4	5
16. Practice	1	2	3	4	5
17. Similarity of learning environment, actions, and feelings to actual task requirements	1	2	3	4	5
18. Degree of original learning	1	2	3	4	5
19. Identification of generalizations	1	2	3	4	5
Students: When asked, "What did you learn today?":					
20. Reflected comprehension of objectives and concepts	1	2	3	4	5

APPENDIX H

NUMBER OF TITLE I STUDENTS SERVED, TOTAL EXPENDITURES, COST PER STUDENT, AND STANDARD MAT GAIN FOR READING AND MATH MODELS (SEPTEMBER 1976)

Model	Number Served*	Expenditures	Cost Per Student	Student Gain**
		Reading Models		
Distar	60	$ 39,740	$662	-
Non-Public	206	88,666	430	4.5
SA	218	87,085	399	1.7
SB	289	100,767	349	6.9
C	149	48,3[illegible]	324	10.3
A	2234	702,614	315	9.8
G	526	160,250	305	12.4
X	106	24,432	230	-
D	326	66,552	204	6.9
Average	457	14,649	358	9.0
		Math Models		
Distar	60	$ 39,740	$662	-
Non-Public	197	85,189	432	8.8
SA	72	29,593	411	7.2
SB	289	100,767	349	11.8
G	414	142,109	343	15.3
F	97	31,183	321	14.8
E	1152	321,697	279	13.5
X	98	22,552	230	-
Average	297	96,604	378	13.0

*Students receiving reading and math instruction were counted twice.
**Gains were computed for only students with a pre- and post-test and identified model.